

NRR-PMDAPEm Resource

From: Murray, Bill <Bill.Murray@duke-energy.com>
Sent: Thursday, October 20, 2016 1:52 PM
To: Hon, Andrew
Subject: [External_Sender] Relief Request ISI-06
Attachments: 10Apr07_NRC100038.pdf; 09May08_BSEP090043.pdf

Andy,

Per our discussion, here is the previous relief request and NRC approval for the same components covered by our latest relief request. There has been no change to the affected components or to our accessibility to those components. As we discussed, the examination is impractical and thus we have proposed an alternative (examination of only the upper welds for the proposed control rod drive housings).

Bill Murray

BNP Regulatory Affairs
910.457.2842

Hearing Identifier: NRR_PMDA
Email Number: 3122

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Recipients:
"Hon, Andrew" <Andrew.Hon@nrc.gov>
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**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

April 7, 2010

Mr. Michael J. Annacone, Vice President
Brunswick Steam Electric Plant
Carolina Power & Light Company
Post Office Box 10429
Southport, North Carolina 28461

**SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2 – RELIEF REQUEST
NUMBER RR-46 FOR THE THIRD 10-YEAR INSERVICE INSPECTION INTERVAL
(TAC NOS. ME1249 AND ME1250)**

Dear Mr. Annacone:

By letter dated May 8, 2009, as supplemented by letter dated December 2, 2009, Carolina Power & Light Company (the licensee) submitted Relief Request (RR) RR-46 regarding a proposed alternative for examination coverage of certain reactor pressure vessel pressure retaining welds in the peripheral control rod drive (CRD) housings during the third 10-year inservice inspection (ISI) interval at Brunswick Steam Electric Plant (BSEP) Units 1 and 2, in lieu of the requirements specified in the American Society for Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI. The third 10-year ISI interval began on May 11, 1998, for BSEP Units 1 and 2, and concluded by May 10, 2008, for Unit 1 and by May 10, 2009, for Unit 2, due to a 1-year extension.

The licensee has shown that it is impractical to examine 100 percent of the ASME Code-required surface examinations on 10 percent of peripheral CRD housing welds. Based on the coverage obtained, the licensee's alternative to examine additional CRD housing tube-to-tube welds, and the visual examinations performed on these components during system pressure tests for each refueling outage, the Nuclear Regulatory Commission (NRC) staff has concluded that if significant service-induced degradation occurred, there is reasonable assurance that evidence of it would be detected. The NRC staff has determined that granting relief pursuant to Title 10 of the *Code of Federal Regulations* (10CFR) 50.55a(g)(6)(i) is authorized by law and will not endanger life or property of the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. Therefore, the NRC grants relief for the subject examinations of the components contained in RR-46 at BSEP, Units 1 and 2 for the third 10-year ISI interval.

M. Annacone

- 2 -

The bases for the NRC staff's conclusion are contained in the enclosed safety evaluation. If you have any questions regarding this issue, please contact Farideh Saba at (301) 415-1447 or farideh.saba@nrc.gov.

Sincerely,

/RA EBrown for/

Douglas A. Broaddus, Acting Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-325 and 50-324

Enclosure: Safety Evaluation

cc w/encl: Distribution via ListServ



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

THIRD 10-YEAR INSERVICE INSPECTION INTERVAL

RELIEF REQUEST RR-46

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NUMBERS 50-325 AND 50-324

1.0 INTRODUCTION

By letter dated May 8, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML091340100), as supplemented by letter dated December 2, 2009 (ADAMS Accession No. ML093440850), Carolina Power & Light Company (the licensee requested Nuclear Regulatory Commission (Commission, NRC) approval of the relief request RR-46 for the third 10-year interval inservice inspection (ISI) program at the Brunswick Steam Electric Plant (BSEP), Units 1 and 2. The third 10-year ISI interval began on May 11, 1998, for BSEP Units 1 and 2, and concluded by May 10, 2008, for Unit 1 and by May 10, 2009, for Unit 2, due to a 1-year extension.

Relief request RR-46 addresses the examination coverage for certain reactor pressure vessel pressure retaining welds in the peripheral control rod drive (CRD) housings, as required by the American Society of Mechanical Engineers (ASME) Code. In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(5)(iii), the licensee proposed to use alternative to the requirements of the ASME Code, Section XI for the BSEP, Units 1 and 2, on the basis that compliance with the ASME Code requirements is impractical due to plant design.

2.0 REGULATORY EVALUATION

The inservice inspection of ASME Code Class 1, Class 2, and Class 3 components is to be performed in accordance with the applicable edition and addenda of ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," as required by Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50 (specifically, paragraph (g) of Section 50.55a), except where specific relief has been granted by the NRC pursuant to 10 CFR 50.55a(g)(6)(i). Paragraph (a)(3) of 10 CFR 50.55a states in part that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if the applicant demonstrates that: (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

In accordance with 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) will meet the requirements set forth in the ASME Code, Section XI to the extent

Enclosure

practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b), 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein.

Furthermore, 10 CFR 50.55a(g)(5)(iii) states that If the licensee has determined that conformance with certain code requirements is impractical for its facility, the licensee shall notify the Commission and submit, as specified in 10 CFR 50.4, information to support the determinations.

Paragraph (g)(5)(iv) of 10 CFR 10 CFR 50.55a states that where an examination requirement by the code or addenda is determined to be impractical by the licensee and is not included in the revised inservice inspection program as permitted by paragraph (g)(4) of this section, the basis for this determination must be demonstrated to the satisfaction of the Commission not later than 12 months after the expiration of the initial 120-month period of operation from start of facility commercial operation and each subsequent 120-month period of operation during which the examination is determined to be impractical.

Pursuant to 10 CFR 50.55a(g)(6)(i), the Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such alternative requirements as it determines is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

The code of record for the third 10-year ISI interval at BSEP, Units 1 and 2 is the ASME Code, Section XI, 1989 Edition with no Addenda.

3.0 TECHNICAL EVALUATION OF RELIEF REQUEST RR-46

3.1 Components for Which Relief is Requested

ASME Code, Class 1, Pressure Retaining Welds in Control Rod Housings

Examination Category B-O, Welds in CRD Housing, Item Number B14.10, in Table IWB-2500-1 of Section XI of the ASME Code requires essentially 100 percent volumetric or surface examination of 10 percent of the peripheral CRD housing welds. The licensee elected to perform surface examinations on the selected CRD housing welds.

BSEP, Unit 1

Component No. and Description

1C11-CRD06-11-SW1, CRD Housing Weld
1C11-CRD06-15-SW1, CRD Housing Weld
1C11-CRD10-07-SW1, CRD Housing Weld
1C11-CRD14-07-SW1, CRD Housing Weld

BSEP, Unit 2

Component No. and Description

2C11-CRD38-47-SW1, CRD Housing Weld
2C11-CRD42-47-SW1, CRD Housing Weld
2C11-CRD46-39-SW1, CRD Housing Weld
2C11-CRD46-43-SW1, CRD Housing Weld

3.2 Applicable ASME Code Edition and Addenda

The code of record for the third 10-year ISI interval is the 1989 edition of ASME Code, Section XI. Relief request RR-46 supports the third 10-year ISI interval for BSEP, Units 1 and 2. The third 10-year ISI interval for both units began on May 11, 1998. As allowed by ASME Code, Section XI, IWA-2430(d), the third 10-year inspection interval for BSEP, Unit 2 was extended for one year. This extension enabled the examination of BSEP, Unit 2 components to coincide with the B219R1 refueling outage, which began February 28, 2009. As such, the third 10-year inspection interval for BSEP, Unit 2 concluded on May 10, 2009, and the third 10-year inspection interval for BSEP, Unit 1 concluded on May 10, 2008.

3.3 Licensee's Proposed Alternative Examination

In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief for the components listed above on the basis that the required examination coverage of "essentially 100 percent" is impractical due to physical obstructions and severely limited access in the work area. As an alternative, the licensee proposed selecting the four additional upper CRD housing tube-to-tube welds, listed in Section 3.6 of this safety evaluation, in lieu of the four lower housing-to-flange welds. This would provide the same total number of CRD housing welds for examination (i.e., eight welds) and will be an equivalent 100 percent inspection of 10 percent of the peripheral housings.

3.4 Impracticality of Compliance

In accordance with 10 CFR 50.55a(g)(5)(iii), relief is requested from the requirement of the ASME Code, Section XI, Sub-article IWB-2500, Table IWB-2500-1 (Volumetric or Surface Examination Category B-O, "Pressure Retaining Welds in Control Rod Drive Housings"), Examination Item Number B14.10, "Welds in CRD Housing." Limited accessibility for the 36 peripheral CRD housing-to-flange welds is due to the close proximity of adjacent CRD housing

flanges, neutron monitoring instrumentation and associated cabling, and horizontal beams, support bars and grids.

Piping systems and associated components for BSEP, Units 1 and 2 were designed and fabricated before the examination requirements of ASME Code, Section XI were formalized and published. Since the plant was not specifically designed to meet the requirements of the ASME Code, Section XI, literal compliance is not feasible or practical within the limits of the current plant design.

3.5 Burden Caused by Compliance

Compliance with the examination coverage requirements of the ASME Code, Section XI would require modification, redesign, or replacement of components where geometry is inherent to the component design.

3.6 Licensee's Basis for Requesting Relief

ASME Code, Section XI, Sub-article IWB-2500, Table IWB-2500-1 requires essentially 100 percent volumetric or surface examination of 10 percent of the peripheral CRD housing welds (Examination Category B-O, Item No. B14.10, as defined by Figure IWB-2500-18). Each CRD housing contains two pressure retaining welds. Table IWB-2500-1 requires both the upper and lower welds of each of the selected CRD housings to be examined. BSEP has 36 peripheral CRD housings; therefore, this requires four CRD housings (i.e., a total of eight CRD housing welds) to be examined. As previously stated, each CRD housing contains two pressure retaining welds: the housing-to-flange weld and the housing tube-to-tube weld. The housing-to-flange weld is located in the inaccessible lower section of the CRD housing, whereas the housing tube-to-tube weld is located in the accessible upper section of the CRD housing.

Limited access to the 36 peripheral CRD housing-to-flange welds is due to the work area under the reactor vessel being highly congested. Physical obstructions imposed by design, geometry, and materials of construction include vessel appurtenances, insulation support rings, structural and component supports, adjacent CRD housing flanges, and neutron monitoring instrumentation and associated cabling. These obstructions are not practical to remove or replace to achieve 100 percent volumetric or surface coverage of the welds in the CRD housings. The upper housing tube-to-tube welds are without obstruction and can be completely examined.

Therefore, as an alternative, the licensee proposes selecting four additional upper CRD housing tube-to-tube welds in lieu of the four lower CRD housing-to-flange welds. This would provide the same total number of CRD housing welds for examination (i.e., eight welds). The licensee performed qualified surface examinations that achieved the maximum, practical amount of coverage obtainable within the limitations imposed by the design of the components, (i.e., 100 percent coverage was achieved). The examinations conducted confirmed satisfactory results, with no unacceptable flaws being identified and no evidence of degradation mechanisms.

Original Sample	Additional Sample
1C11-CRD06-11-SW2	1C11-CRD38-47-SW2
1C11-CRD06-15-SW2	1C11-CRD42-47-SW2

Original Sample	Additional Sample
1C11-CRD10-07-SW2	1C11-CRD46-39-SW2
1C11-CRD14-07-SW2	1C11-CRD46-43-SW2
2C11-CRD38-47-SW2	2C11-CRD06-11-SW2
2C11-CRD42-47-SW2	2C11-CRD06-15-SW2
2C11-CRD46-39-SW2	2C11-CRD10-07-SW2
2C11-CRD46-43-SW2	2C11-CRD14-07-SW2

As Class 1 Examination Category B-O components, a visual (VT-2) examination is also performed on these components during system pressure tests each refueling outage. This was completed during the BSEP, Unit 1, 2008 refueling outage (i.e., the B117R1 outage) and BSEP, Unit 2, 2009 refueling outage (i.e., the B219R1 outage), and no evidence of leakage was identified for these components. Reactor coolant system leak rate limitations and atmospheric particulate radioactivity monitoring also ensure that any leakage would be detected prior to gross failure.

3.7 NRC Staff Evaluation

The ASME Code requires 100 percent volumetric or surface examination of 10 percent of the peripheral CRD housing welds. The licensee elected to perform surface examinations on the selected CRD housing welds. However, for the CRD housing-to-flange welds located in the inaccessible lower section of the CRD housing, the required inspection surface could not be obtained due to physical obstructions imposed by design, geometry, and materials of construction including vessel appurtenances, insulation support rings, structural and component supports, adjacent CRD housing flanges, and neutron monitoring instrumentation and associated cabling. Therefore, obtaining 100 percent of the ASME Code-required surface examinations is not practical for the lower CRD housing-to-flange welds. The NRC staff further determined that in order for the licensee to perform the ASME Code-required examinations, the subject components would have to be modified, redesigned, or replaced placing a burden on the licensee. The drawings and descriptions provided by the licensee support the fact that the area under the reactor pressure vessel is highly congested and show that examinations of the subject welds have been performed to the extent practical. No unacceptable indications, or evidence of degradation mechanisms were found during these examinations.

The licensee has added four additional housing tube-to-tube welds located in the accessible upper section of the CRD housing in each unit to the inspection population to account for the limited examinations and ensure that an equivalent 100 percent inspection of 10 percent of the peripheral housings will be obtained. A visual (VT-2) examination is also performed on these components during system pressure tests for each refueling outage. This was completed during the BSEP, Unit 1, 2008 refueling outage and BSEP, Unit 2, 2009 refueling outage and no evidence of leakage was identified for these components. Reactor coolant system leak rate limitations and atmospheric particulate radioactivity monitoring also ensure that any leakage would be detected prior to gross failure.

The licensee has shown that it is impractical to examine 100 percent of the ASME Code-required surface examinations on 10 percent of peripheral CRD housing-to-flange welds. Based on the coverage obtained, the licensee's alternative to examine additional CRD housing tube-to-tube welds, and the VT-2 examinations performed on these components during system

pressure tests for each refueling outage, the NRC staff has concluded that if significant service-induced degradation occurs, there is reasonable assurance that evidence of it will be detected. Therefore, the NRC staff has determined that granting relief pursuant to 10 CFR 50.55a(g)(6)(i) is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

4.0 CONCLUSION

The NRC staff has reviewed the licensee's submittal and concludes that ASME Code examination coverage requirements are impractical for the lower CRD housing-to-flange welds listed in relief request RR-46. Furthermore, imposition of these ASME Code requirements would create a burden on the licensee. The NRC staff also determined that based on the visual examination obtained of the CRD housing welds, it is reasonable to conclude that if significant service-induced degradation had occurred, evidence of it would have been detected by the examinations that were performed. Furthermore, the NRC staff concludes that examinations performed to the extent practical on the upper CRD housing tube-to-tube welds provide reasonable assurance of structural integrity of the subject welds since we conclude that both the upper and lower CRD housing welds are subject to similar degradation mechanisms.

Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(6)(i). The NRC staff has further determined that granting relief request RR-46 pursuant to 10 CFR 50.55a(g)(6)(i) is authorized by law and will not endanger life or property, or the common defense and security, and is otherwise in the public interest given due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. Therefore, the NRC grants relief for the subject examinations of the components contained in relief request RR-46 at BSEP, Units 1 and 2 for the Third 10-year ISI interval.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in the subject requests for relief remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: Edward V. Andruszkiewicz

Date: April 7, 2010

M. Annacone

- 2 -

The bases for the NRC staff's conclusion are contained in the enclosed Safety Evaluation. If you have any questions regarding this issue, please contact Farideh Saba at (301) 415-1447 or farideh.saba@nrc.gov.

Sincerely,

/RA EBrown for/

Douglas A. Broaddus, Acting Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-325 and 50-324

Enclosure: Safety Evaluation

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NRR-106

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10 CFR 50.55a(g)(5)(iii)

MAY 08 2009

SERIAL: BSEP 09-0043

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Brunswick Steam Electric Plant, Unit Nos. 1 and 2
Docket Nos. 50-325 and 50-324/License Nos. DPR-71 and DPR-62
Proposed Alternative for the Third 10-Year Inservice Inspection Program

Ladies and Gentlemen:

This letter submits a request, in accordance with 10 CFR 50.55a(g)(5)(iii), to use a proposed alternative to the applicable edition of the American Society of Mechanical Engineers (ASME) Code, Section XI for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2, on the basis that compliance with the specified requirements is impractical due to plant design. Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., is submitting this relief request for ASME Code, Section XI control rod drive housing weld examinations performed during the third 10-year inservice inspection interval where the inspection coverage achieved was less than 100 percent due to physical obstructions and geometric interferences.

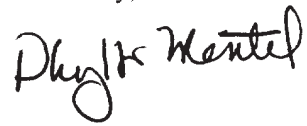
The relief request supports the third 10-year inservice inspection interval for both BSEP, Unit 1 and Unit 2. The third 10-year inservice inspection interval began on May 11, 1998. As allowed by sub-article IWA-2430(d) of the ASME Code, Section XI, the third 10-year inspection interval for Unit 2 was extended for one year. This extension enabled the examination of Unit 2 components to coincide with the B219R1 refueling outage, which began February 28, 2009. As such, the third 10-year inspection interval for BSEP, Unit 2 will conclude on May 10, 2009, and the third 10-year inspection interval for BSEP, Unit 1 concluded on May 10, 2008.

CP&L requests approval of this relief request by April 30, 2010.

Document Control Desk
BSEP 09-0043 / Page 2

No regulatory commitments are contained in this letter. Please refer any questions regarding this submittal to Mr. Gene Atkinson, Supervisor - Licensing/Regulatory Programs, at (910) 457-2056.

Sincerely,

A handwritten signature in black ink, reading "Phyllis N. Mentel". The signature is written in a cursive, flowing style.

Phyllis N. Mentel
Manager - Support Services
Brunswick Steam Electric Plant

WRM/wrm

Enclosures: 10 CFR 50.55a Request Number RR-46

cc (with enclosure):

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U. S. Nuclear Regulatory Commission
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U. S. Nuclear Regulatory Commission **(Electronic Copy Only)**
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Rockville, MD 20852-2738

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Mr. Jack M. Given, Jr., Bureau Chief
North Carolina Department of Labor
Boiler Safety Bureau
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Raleigh, NC 27699-1101

10 CFR 50.55a Request Number RR-46

Proposed Alternative In Accordance with 10 CFR 50.55a(g)(5)(iii)

- Inservice Inspection Impracticability -

1. ASME Code Components Affected

Code Class: 1

References: Subarticle IWB-2500, Table IWB-2500-1

Examination Categories: B-O, "Pressure Retaining Welds in Control Rod Housings"

Item Numbers: B14.10, "Welds in CRD Housing"

Description: Volumetric Examination Coverage

Component Numbers: 1C11-CRD06-11-SW1 CRD Housing Weld
1C11-CRD06-15-SW1 CRD Housing Weld
1C11-CRD10-07-SW1 CRD Housing Weld
1C11-CRD14-07-SW1 CRD Housing Weld
2C11-CRD38-47-SW1 CRD Housing Weld
2C11-CRD42-47-SW1 CRD Housing Weld
2C11-CRD46-39-SW1 CRD Housing Weld
2C11-CRD46-43-SW1 CRD Housing Weld

2. Applicable Code Edition and Addenda

The Inservice Inspection Program for the third 10-year inservice inspection interval was based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 1989 Edition with no Addenda.

3. Applicable Code Requirement

Sub-article IWB-2500, Table IWB-2500-1, requires essentially 100 percent volumetric or surface examination of 10 percent of the peripheral control rod drive (CRD) housing welds (Examination Category B-O, Item No. B14.10, as defined by Figure IWB-2500-18). Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., elected to perform surface examinations on the selected CRD housing welds.

4. Impracticability of Compliance

In accordance with 10 CFR 50.55a(g)(5)(iii), relief is requested from the requirement of the ASME Code, Section XI, Sub-article IWB-2500, Table IWB-2500-1 (Volumetric or Surface

Examination Category B-O, "Pressure Retaining Welds in Control Rod Drive Housings"), Examination Item Number B14.10, "Welds in CRD Housing." Limited accessibility for the 36 peripheral CRD housing welds is due to the close proximity of adjacent CRD housing flanges, neutron monitoring instrumentation and associated cabling, and horizontal beams, support bars and grids.

5. **Burden Caused by Compliance**

Compliance with the examination coverage requirements of the ASME Code, Section XI, would require modification, redesign, or replacement of components where geometry is inherent to the component design.

6. **Proposed Alternative and Basis for Use**

Proposed Alternative

In accordance with 10 CFR 50.55a(g)(5)(iii), CP&L is requesting relief for the components listed above on the basis that the required examination coverage of "essentially 100 percent" is impractical due to physical obstructions and severely limited access in the work area. As an alternative, CP&L proposes selecting the four additional upper CRD housing welds, listed below, in lieu of the four lower housing-to-flange welds. This would provide the same total number of CRD housing welds for examination (i.e., eight welds) and will be an equivalent 100 percent inspection of 10 percent of the peripheral housings.

Unit 1 Additional CRD Housing Weld Examinations	Unit 2 Additional CRD Housing Weld Examinations
1C11-CRD38-47-SW2	2C11-CRD06-11-SW2
1C11-CRD42-47-SW2	2C11-CRD06-15-SW2
1C11-CRD46-39-SW2	2C11-CRD10-07-SW2
1C11-CRD46-43-SW2	2C11-CRD14-07-SW2

Basis for Use

The ASME Code, Section XI, Sub-article IWB-2500, Table IWB-2500-1, requires essentially 100 percent volumetric or surface examination of 10 percent of the peripheral CRD housing welds (Examination Category B-O, Item No. B14.10, as defined by Figure IWB-2500-18). Each CRD housing contains two pressure retraining welds. Table IWB-2500-1 requires both the upper and lower welds of each of the selected CRD housings to be examined.

BSEP has 36 peripheral CRD housings; therefore, this requires four CRD housings (i.e., a total of eight CRD housing welds) to be examined. As previously stated, each CRD housing contains two pressure retaining welds: the housing-to-flange weld and the housing tube-to-tube weld. The housing-to-flange weld is located in the inaccessible lower section of the CRD housing, whereas the housing tube-to-housing tube weld is located in the accessible upper section of the CRD housing (i.e., shown on Drawings 0-FP-05609; C-24004, Sheet 26-1; and C-02404, Sheet 26-1; provided in Attachments 1, 2, and 3, respectively).

Limited access for the 36 peripheral CRD housing-to-flange weld welds is due to the work area under the reactor vessel being highly congested, as shown in the photographs in Attachment 4. Physical obstructions imposed by design, geometry, and materials of construction include vessel appurtenances, insulation support rings, structural and component supports, adjacent CRD housing flanges, and neutron monitoring instrumentation and associated cabling. These obstructions are not practical to remove or replace to achieve 100 percent volumetric or surface coverage of the welds in the CRD housings. The upper housing welds are without obstruction and can be completely examined.

Therefore, as an alternative, CP&L proposes selecting four additional upper CRD housing welds in lieu of the four lower housing-to-flange welds. This would provide the same total number of CRD housing welds for examination (i.e., eight welds).

CP&L performed qualified surface examinations that achieved the maximum, practical amount of coverage obtainable within the limitations imposed by the design of the components. The examinations conducted confirmed satisfactory results, with no unacceptable flaws being identified and no evidence of degradation mechanisms.

Percent of Code-Required Volume Achieved			
Original Sample		Additional Sample	
1C11-CRD06-11-SW2	100% Coverage Achieved	1C11-CRD38-47-SW2	100% Coverage Achieved
1C11-CRD06-15-SW2	100% Coverage Achieved	1C11-CRD42-47-SW2	100% Coverage Achieved
1C11-CRD10-07-SW2	100% Coverage Achieved	1C11-CRD46-39-SW2	100% Coverage Achieved
1C11-CRD14-07-SW2	100% Coverage Achieved	1C11-CRD46-43-SW2	100% Coverage Achieved
2C11-CRD38-47-SW2	100% Coverage Achieved	2C11-CRD06-11-SW2	100% Coverage Achieved
2C11-CRD42-47-SW2	100% Coverage Achieved	2C11-CRD06-15-SW2	100% Coverage Achieved
2C11-CRD46-39-SW2	100% Coverage Achieved	2C11-CRD10-07-SW2	100% Coverage Achieved
2C11-CRD46-43-SW2	100% Coverage Achieved	2C11-CRD14-07-SW2	100% Coverage Achieved

As Class 1 Examination Category B-O components, a visual (VT-2) examination is also performed on these components during system pressure tests each refueling outage. This was completed during the Unit 1 2008 refueling outage (i.e., the B117R1 outage) and Unit 2 2009 refueling outage (i.e., the B219R1 outage), and no evidence of leakage was identified for these components. Reactor coolant system leak rate limitations and atmospheric particulate radioactivity monitoring also ensure that any leakage would be detected prior to gross failure.

7. Duration of the Proposed Alternative

Use of the proposed alternative is applicable to the third 10-year inservice inspection interval at BSEP, Units 1 and 2. The third 10-year interval began on May 11, 1998, and ended on May 10, 2008, for Unit 1 and will end on May 10, 2009, for Unit 2.

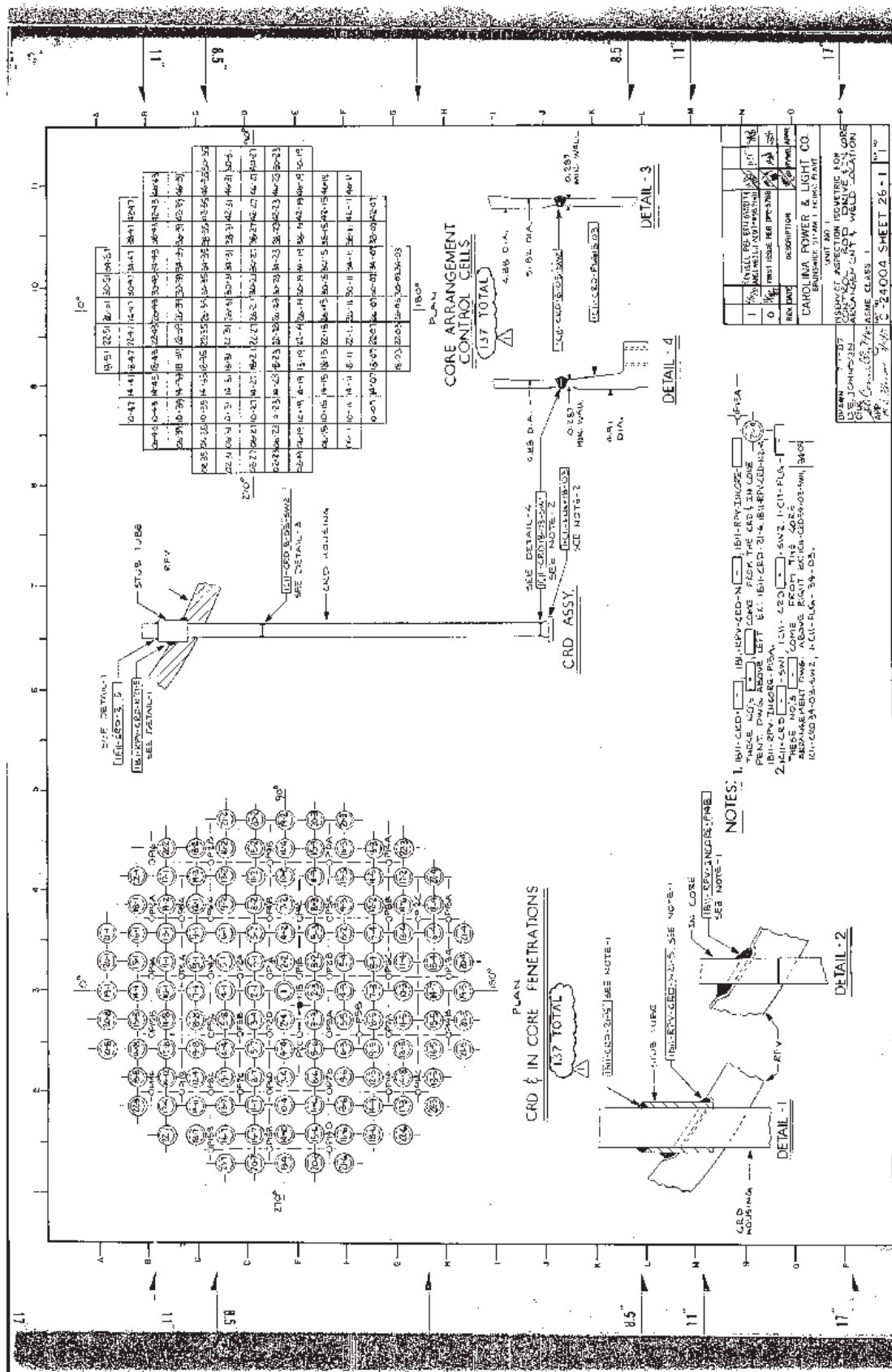
8. Precedents

Similar relief request was granted for the Pilgrim Nuclear Power Station, as listed in Reference 1.

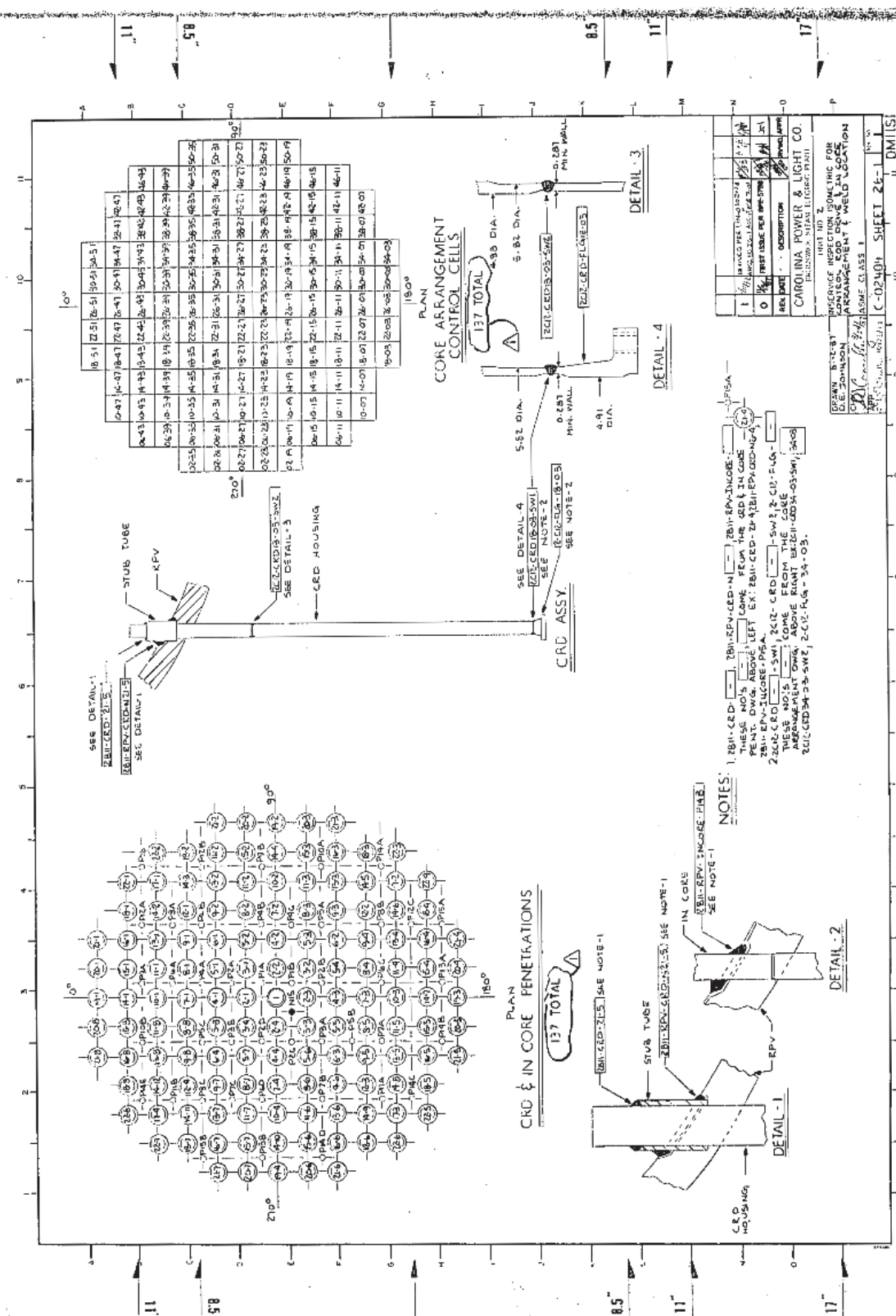
9. References

1. Letter from U.S. Nuclear Regulatory Commission (USNRC) to Entergy Nuclear Operations, Inc., Third 10-Year Interval Inservice Inspection Program Plan Request for Relief Request No. PRR-42, Revision 1 – Pilgrim Nuclear Power Station (TAC No. MD6767), dated June 27, 2008, ADAMS Accession Number ML081300415.

ATTACHMENT 2



ATTACHMENT 3



ATTACHMENT 4



Figure 1 - Under-Vessel Area

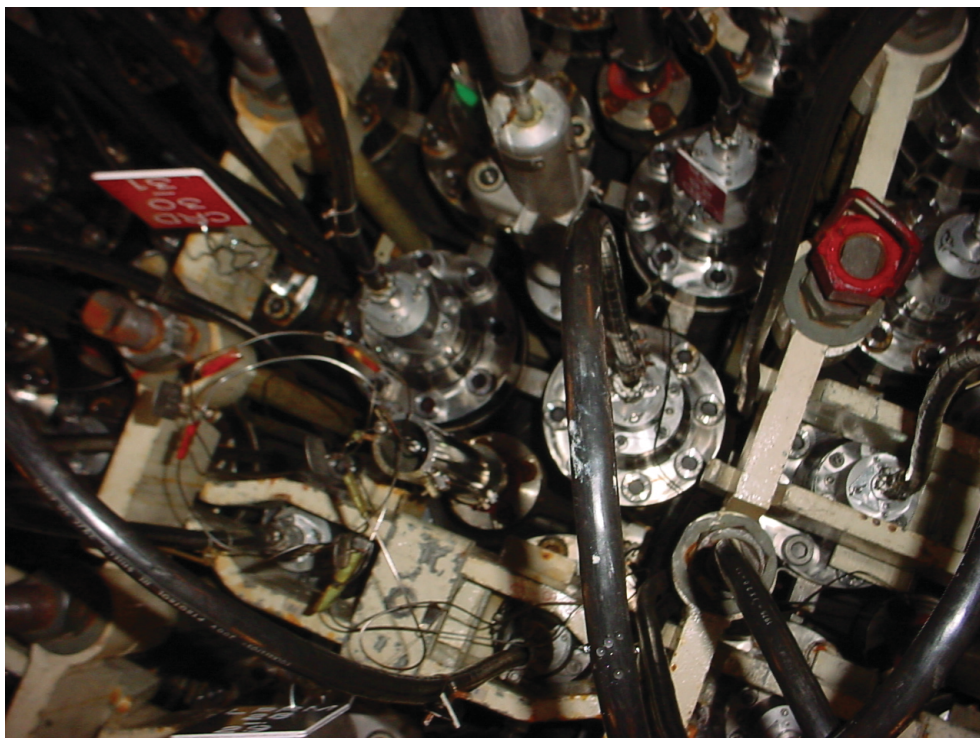


Figure 2 - Under-Vessel Area, Looking Upwards